

Agenda item F-2.4

38th Argos Operations Committee meeting
Prepared by CLS
Date : May, 10th 2004

SYSTEM IMPROVEMENTS

1. Hardware configuration

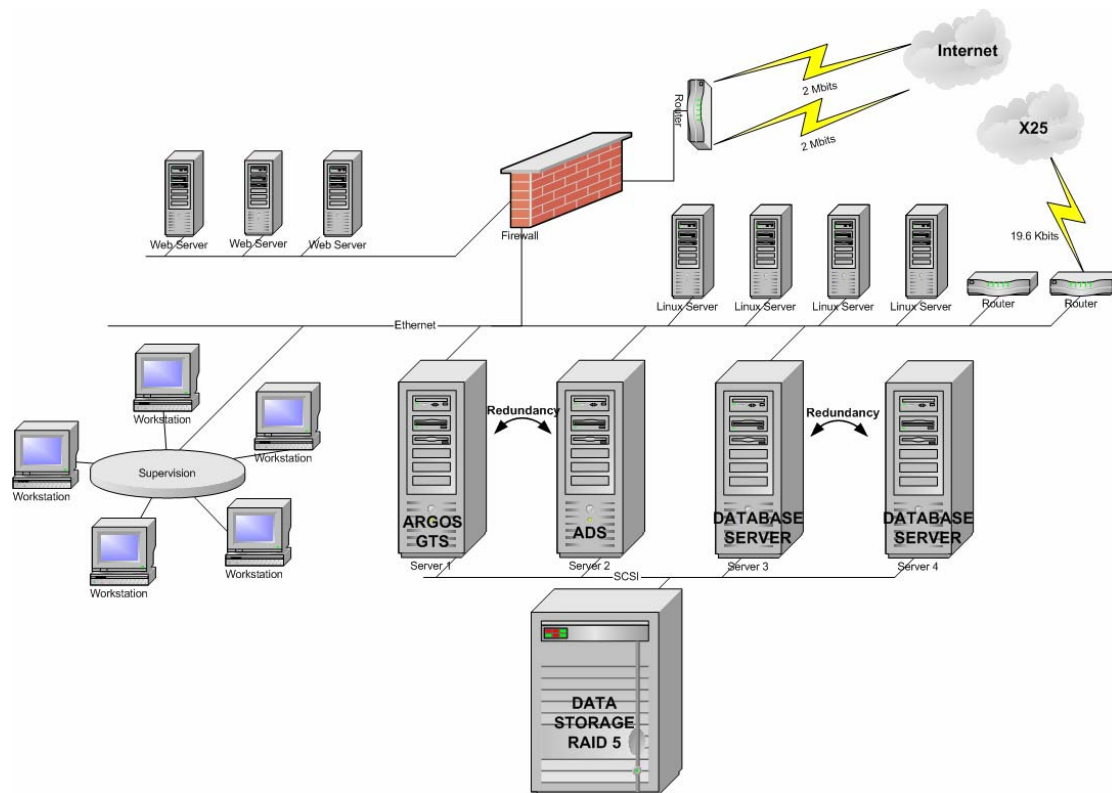
2003 has been dedicated to the preparation of the Argos 2001 phase 2 installation :

- Four new Linux processors have been implemented to the existing configuration,
- More space disk has been added to the data storage facility,
- New fax server has been implemented.

Several conclusive tests have been performed in 2003 to improve the level of redundancy between both global processing centers.

The CLS local area network, based on Ethernet, has been upgraded, especially the network switches. Our local network is now at 100 Mbit for half part and 1 Gbit for the other part.

Our computer architecture is the following one :



Seven new HRPT stations joined our network in 2003, thus helping to improve data throughput times to users. They are in Antartica Chile, Meteo Chile), Athenes (Greece, CLS), Fidji (Fidji, FMS), Punta Arena (Chile), Riyad (Saudi Arabia, CACST), Sondre (Greeland, DMI) and Tromsoe (Norway, NMI).

3.1 Argos 2001

This project is scheduled in three phases:

Phase II: Improvement and development of value-added services.

Phase III: Redesign of the Argos processing system. This phase has been subdivided into 2 sub phases:

- IIIA : Redesign of Argos processing chain
- IIB : Redesign of GTS processing chain

Current status:

Phase I:

Development began end 1998 and is finished.

The user management application is operational.

The User Office application is operational since end of 2000.

The problems of performance in the new data distribution system have been solved. The opening of the website to the users has been made in May 2003.

Phase II:

Requirement specifications were reviewed and approved in January 2002.

Software specifications have been finished in July 2002.

The development have been commence in December 2002.

The development has been completed in may 2004.

This phase will be put in operation during last quarter of 2004.

Phase III:

Requirement specifications has been reviewed in July 2003.

The development has been started end of 2003.

The Software Specification Review of phase IIIA took place in May 2004.

The phase IIIA will be finished in February 2005.

The phase IIIB will be finished in October 2005.

3.2 Argos 3 ground segment (SSA3 project)

In March 2003 started a new and major project for Argos named: SSA3 (Argos 3 ground segment). This project is aiming to take into account all the changes in the current Argos ground segment brought by the third generation of Argos instruments. The sub-systems of the Argos 3 ground segment development shall be completed and validated for the first METOP satellite launch (last quarter of 2005).

This project is driven in parallel with the Argos 2001 Phase III project.

The Project covers the following developments:

- Software evolutions of the Argos processing Center (APC). It includes all sub-systems where the arrival of the Argos 3 has an impact.
- Datation beacon
- A new network of master beacons (High data rate platforms)
- A test equipment for PTT/PMT type acceptance.

- **Argos Processing Center**

The Argos Processing center is made up of several sub-systems. Each sub-system follows its own life cycle driven by the need in terms of integration and validation of the center.

These subsystems are:

- ACQ/PTR: it is responsible for the acquisition of the mission telemetry from the regional antenna or the global receiving stations. Once acquired, the telemetry is processed in order to provide the other subsystems with “clean” and homogeneous Argos telemetry. ACQ/PTR is in its validation phase which is scheduled to end in July 2004.
- LOC: it is in charge for the determination of the plate-form localization by using the frequency measurements made by the instruments. The design phase is ongoing and its validation phase is foreseen in December 2004.
- DAT/ORB: The relation between the on board time and UTC, used to time stamp the Argos messages, is assessed by the DAT subsystem. ORB is in charge of the production of ephemeris data used to localize the satellites. Both subsystems will be slightly modified and it is scheduled to validate them by the end of 2004.
- TRM and GTS are two subsystems for which the evolution are mainly due to the objectives of the A2001 Phase III. It means to provide new capabilities to the users for encoding what they want to transmit through Argos.
- DMMC: this sub-system is responsible for the management of the downlink message capability. Due to the failure of ADEOS II mission, this sub-system is now fully dedicated to Argos 3 instrument. The Specification Requirement Review took place on April, 29 2004. A first version of this subsystem is scheduled in November 2004. The first version is mainly dedicated to the instrument administration. The second version, including all services available for the users, is scheduled to take its acceptance tests in April 2005.

The full center has to be ready, i.e. integrated and validated, for the METOP launch (last 2005 quarter). The integration tests with EUMETSAT are scheduled in October 2004. For these tests, only ACQ/PTR is requested.

- **Datation beacon**

A new generation of the datation beacon has been specified to meet the new requirements of the Argos 3 instrument. The Factory Acceptance Test is scheduled mid of June 2004.

- **Master Beacon**

The Master Beacon, compliant with Argos 3 instrument, has been accepted by the CNES in March 2004. The MB setting up in Svalbard is scheduled in September 2004.

- ***Test equipment for PTT/PMT***

The test equipment purpose is to ensure that any new PTT/PMT series will be in compliance with the Argos general specification (and first of all, will not disturb the Argos equipment functioning) . At the present time, the development is in the design phase and the integration test of specific hardware as the Vector Signal Analyser provided by CNES. The test equipment is scheduled to take its acceptance tests in April 2005.

4. Regional processing centers

The three regional processing centers—in Melbourne, Tokyo, and Lima—operated without a major hitch in 2003.

In 2003, we have prepared the creation of the Indonesian regional center in Jakarta. The installation is planned for 2004.